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EXAMINER	
CARDENAS NAVIA, JAIME F	
ART UNIT	PAPER NUMBER
3624	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/963,960	BURKHARDT ET AL.	
	Examiner	Art Unit	
	Jaime Cardenas-Navia	3624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-16,18-25 and 27-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-16,18-25 and 27-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This **FINAL** office action is in response to communications received on October 10, 2008. Claims 1, 9, 10, 18, 19, and 27 have been amended. No new claims have been added. Claims 8, 17, and 26 have been previously cancelled. Claims 1-7, 9-16, 18-25, and 27-30 are currently pending.

Response to Arguments

2. Applicant's arguments have been fully considered by the Examiner. In particular, Applicant argues regarding independent claims 1, 9, 10, 18, 19, and 27 that (1) neither Jameson nor Christensen, alone or in combination, teach or suggest "decompositioning the supply chain planning problem into a plurality of independent sub-problems, **said supply chain planning problem comprising at least one of a demand forecasting planning problem, a service level planning problem, and a replenishment planning problem**", "operating plurality of processors, each processor of said plurality of processors **coupled** with a respective partition of said plurality of distributed database partitions", or "solving each of said plurality of said independent sub-problems **by each processor of said plurality of processors coupled with said respective partition of said plurality of distributed database partitions, wherein each processor of said plurality of processors is operating in parallel**". Additionally, Applicant argues regarding all claims that (2) the office action fails to properly establish a *prima facie* case

of obviousness. Finally, Applicant argues that (3) all dependent claims are allowable at least as a result of arguments (1) and (2).

Regarding argument (1), Examiner respectfully disagrees. Jameson clearly teaches "decompositioning the supply chain planning problem into a plurality of independent sub-problems, **said supply chain planning problem comprising at least one of a demand forecasting planning problem** (col. 19, lines 1-45, uncertain future demand is a demand forecasting planning problem)**, a service level planning problem** (col. 6, lines 46-61, meeting contractual obligations is a service level planning problem)**, and a replenishment planning problem**" (col. 19, lines 1-45, determining capacity levels over time is a replenishment planning problem). Christensen clearly teaches "said plurality of processors **coupled** with a respective partition of said plurality of distributed database partitions" (fig. 3, PM Servers **10** are plurality of processors coupled with Data Hunks **24** and Distributed Databases **16**), as well as "solving each of said plurality of said independent sub-problems **by each processor of said plurality of processors coupled with said respective partition of said plurality of distributed database partitions, wherein each processor of said plurality of processors is operating in parallel**" (fig. 3, PM Servers **10** are plurality of processors coupled with Data Hunks **24** and Distributed Databases **16**, it is clear from the drawing that all the processors are operating in parallel).

Regarding argument (2), Examiner respectfully disagrees. Jameson and Christensen **are** the findings of fact. An indication of the level of ordinary skill in the art at the time of the invention is provided implicitly by the prior art, as well as by Examiner's assertion on p. 6 of the office action when describing Christensen's disclosure that "the advantage of such features is that it enables one of ordinary skill in the art to process information at greater efficiencies", which is

backed by Christensen's disclosure on "High Performance Relational Database Management System" (title).

With regards to establishing obviousness, the USPTO has issued examination guidelines for determining obviousness under 35 U.S.C. 103 in view of the Supreme Court decision in KSR International Co. v. Teleflex Inc. First an Examiner must complete the basic factual inquiries of Graham v. John Deere Co. Next, seven rationales are provided in 72 Fed. Reg. 57526 (dated October 10, 2007) to determine whether the claimed invention would have been obvious to one of ordinary skill in the art: (A) combining prior art elements according to known methods to yield predictable results; (B) simple substitution of one known element for another to obtain predictable results; (C) use of known technique to improve similar devices (methods, or products) in the same way; (D) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) "obvious to try"---choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; and (G) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. The MPEP further clarifies that the prior art references must disclose or suggest all of the claimed features. See MPEP 2143.

Examiner used rationale (A) for all obviousness rejections. All claimed elements were taught by Jameson or Christensen, and would have yielded predictable results. Examiner

established this by stating that Christensen pertains to an analogous art (office action, p. 5) and by citing Christensen's abstract that the invention can be used to increase the performance of a database system. Additionally, fig. 3 of Christensen shows how the database management system can be integrated with any client **28** computer. Thus, a proper *prima facie* case for obviousness has been established.

If Applicant has specific factual information to the contrary (that disputes Examiner's findings), then Examiner respectfully asks that Applicant place these on the record.

Regarding argument (3), Examiner respectfully disagrees as per the response to arguments (1) and (2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-7, 9-16, 18-25, and 27 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Jameson (U.S. Patent No. 6219649) in view of Christensen (U.S. Patent Publication No. 20020049759).

Regarding claim 1, Jameson teaches a computer-implemented method for solving a supply chain planning problem (see abstract; where a resource allocation optimization method is disclosed. A resource allocation method is a supply chain planning problem.), comprising:

decompositioning the supply chain planning problem into a plurality of independent sub-

problems" (see Jameson column 7 lines 45-54; where the allocation problem is divided in to simpler sub-problems. Resource allocation is a part of supply chain management.), said supply chain planning problem comprising at least one of a demand forecasting planning problem (col. 19, lines 1-45, uncertain future demand is a demand forecasting planning problem), a service level planning problem (col. 6, lines 46-61, meeting contractual obligations is a service level planning problem), and a replenishment planning problem" (col. 19, lines 1-45, determining capacity levels over time is a replenishment planning problem),

"solving each of said plurality of said independent sub-problems by separate processes operating in parallel" (see Jameson column 8 lines 8-25; where the sub-problems are solved to determine the optimal allocation point. Each sub-problem is solved independently. The matrices are stored on individual machines thus allowing the matrices to be stored across several computers. A distributed database is defined as a database that be distributed to several computers.).

Jameson fails to explicitly teach organizing the sub-problems in to partitions and imploring processors to execute the database partitions.

Christensen, in an analogous art, teaches "providing a plurality of distributed database partitions, each partition of said plurality of distributed database partitions associated with a respective independent data hunks of said supply chain planning problem" (see Christensen abstract and paragraph 46; where a plurality of database partitions are provided to for processing data hunks.),

"operating a plurality of processors in said database, each processor of said plurality of processors coupled with a respective partition of said plurality of distributed database partitions"

(see Christensen abstract and paragraph 46; where parallel processing is used to process the database partitions, fig. 3, PM Servers **10** are plurality of processors coupled with Data Hunks **24** and Distributed Databases **16**),

"forming a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items" (see Christensen abstract and paragraph 46; where the performance monitoring server partitions the database in to hunks. Hunks are related items. Hunks are the same thing as sub-problem partitions.),

"loading data into a plurality of distributed database partitions, said data associated with said plurality of related items, and each of said distributed database partitions associated with a respective one of each of said distributed sub-problem partitions" (see Christensen abstract and paragraph 46; where data is in the distributed database partition. The parallel processing of the distributed database partitions enables faster performance of processing working data.), and

"solving each of said plurality of said independent sub-problems by each processor of said plurality of processors coupled with said respective partition of said plurality of distributed database partitions, wherein each processor of said plurality of processors is operating in parallel" (fig. 3, PM Servers 10 are plurality of processors coupled with Data Hunks 24 and Distributed Databases 16, it is clear from the drawing that all the processors are operating in parallel)".

The advantage of such features is that it enables one of ordinary skill in the art to process information at greater efficiencies. It would have been obvious, at the time of the invention, to one of ordinary skill in the art to combine the features of "providing a plurality of distributed database partitions, each partition of said plurality of distributed database partitions associated

with a respective independent data hunks of said supply chain planning problem", "operating a plurality of processors in said database, each processor of said plurality of processors associated with a respective partition of said plurality of distributed database partitions", "forming a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items", "loading data into a plurality of distributed database partitions, said data associated with said plurality of related items, and each of said distributed database partitions associated with a respective one of each of said distributed sub-problem partitions" taught by Christensen to Jameson in order to increase the performance of the system, which is a goal of Christensen (see abstract).

Regarding claim 2, Jameson discloses the method of Claim 1, further comprising:

forming a plurality of clusters, each of said clusters including said plurality of related items (see column 8 lines 5-12; where optimal points are clustered and the clusters include the scenario, where scenarios are a set of related events); and

forming said plurality of distributed sub-problem from said plurality of clusters (see column 5 lines 35-40 and column 11 lines 3-15, column 7 lines 45-54, and column 8 lines 19-21; where the system accounts for larger sub-problems. Sub-problems are defined as larger sub-problems per the specification (see specification p. 9 line 16). Further, clusters are combined to create larger clusters or larger sub-problems. The sub- problems consist of scenarios, where a scenario is a set of related events).

Regarding claim 3, Jameson teaches the number of sub-problems is equal to the number of clusters (see column 7 lines 58-67, column 8 lines 1-8, and column 19 lines 1-46), however

fails to explicitly teach "the number of distributed data is equal to the number of database partitions".

Christensen, in an analogous art, teaches "the number of distributed data is equal to the number of database partitions" (see paragraph 31; where the number of related items is equal to the number of database partitions set to be solved.). The advantage of such features is that it enables one of ordinary skill in the art to process information at greater efficiencies. It would have been obvious, at the time of the invention, to one of ordinary skill in the art to combine the feature of "the number of distributed data is equal to the number of database partitions" taught by Christensen to Jameson in order to increase the performance of the system, which is a goal of Christensen (see abstract).

Regarding claim 4, Jameson discloses the method of claim 1, wherein said plurality of related items are related by one or more pre-define relationship rules (see column 10 lines 50-68, column 11 lines 1-29, and figures 6-8; where all of the elements of a scenario are processed under pre-defined rules).

Regarding claim 5, Jameson teaches the method of claim 2, wherein the forming said plurality of said clusters further comprises a step of storing said clusters (see column 18 lines 49-61 ; where cluster arguments and function calls are stored to increase performance of future processing by calling stored results).

Jameson fails to disclose the step of forming said plurality of said clusters further comprises a step of assigning a CLUSTER_ID to each item of said plurality of related items.

It is old and well-known in data management to assign an identification value to items stored in a database. The step of storing a cluster automatically gives it a CLUSTER_ID in a

database row. The advantage of assigning an identification value to items stored in a database is that the item and its respective row can be more efficiently found in the database by simply querying the database for the assigned identification value.

It would have been obvious, at the time of the invention, for one of ordinary skill in data management to assign an identification value to the clusters stored in Jameson's system in order to more efficiently find the clusters and their stored results.

Regarding claim 6, Jameson teaches the step of forming a plurality of distributed sub-problem partitions from said plurality of clusters (see column 7 lines 45-58 and column 24 lines 61-67; where clustering is used to divide resource allocation problems into simpler sub-problems. Using simpler sub-problems enhances the system to run faster and simpler. Furthermore, multiple processors can be used to solve each of the sub-problems.).

Although Jameson teaches creating sub-problems in order to facilitate computational time and complexity, Jameson fails to explicitly teach creating sub- problem objects of the same size.

It is old and well-known in the art to equally size objects for processing. The advantage of creating objects of the same size is that it increasing the computational speed and minimizing the computational complexity.

It would have been obvious, at the time of the invention, to one of ordinary skill in the art to take the teachings of Jameson to divide an allocation problem into sub-problems and modify Jameson to include the feature of equally sizing the sub-problem partitions in order to increase the system speed and minimizing the computational complexity, which is a goal of Jameson (see column 7 lines 45-57 and column 24 lines 61-67).

Regarding claim 7, Jameson discloses the method of claim 1, wherein the step of solving each of said plurality of said distributed sub-problems further comprises a step of solving said plurality of independent sub-problems in parallel (see column 24 lines 61-67; where the use of multiple processors is desirably for the parallel execution of multiple instances of clusters).

Claims 9-16, 18-25, and 27 recite a "computer-implemented system for solving a supply chain planning problem" and "software for solving a supply chain planning problem" taught by Jameson (see column 1 lines 13-14 and column 5 lines 35-40). Claims 10-16, 18-25, and 27 further recite limitations already addressed by the rejections of claims 1-7 and 9; therefore the same rejection applies to this claim.

5. **Claims 28-30 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Jameson (U.S. Patent No. 6219649)in view of Christensen (U.S. Patent Publication No. 20020049759) and in further view of Chopra et al. (Chopra, Sunil; Meindl, Peter; Chain Management: Strategy, Planning, and Operation, Prentice Hall, October 2000).

Regarding claim 28, Jameson teaches "said supply chain planning problems comprise problems selected from the group consisting of demand forecasting" (see column 5 lines 13-34 and column 19 lines 1-45; where uncertain constraints are handled and a resource allocation problem in terms of an forecasted demand uncertainty is provided.).

Jameson fails to explicitly teach supply chain problems of "service level planning" and "replenishment planning".

Chopra, in an analogous art, teaches solving supply chain problems for "service level planning" and "replenishment planning" (see pp. 179-220; where methods for cycle service level

planning and replenishment policies is discussed). Chopra further teaches supply chain problems of demand forecasting (see pp. 67-100; where planning for demand using demand certainty and demand uncertainty is done). The advantage of solving supply chain problems of demand forecasting, service level planning, and replenishment planning is that it facilitates the availability of product in light of the supply and demand variability.

It would have been obvious, at the time of the invention, to combine the teachings supply chain management with regard to "supply chain problems consisting of demand forecasting, service level planning, and replenishment planning" of Chopra to Jameson in order to facilitate the availability of product in light of the supply and demand variability, which is a goal of Chopra (see p. 179-180).

Claims 29-30 recite a "computer-implemented system for solving a supply chain planning problem" and "software for solving a supply chain planning problem" taught by Jameson (see column 1 lines 13-14 and column 5 lines 35-40). Claims 29-30 further recite limitations already addressed by the rejection of claim 28; therefore the same rejection applies to these claims.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaime Cardenas-Navia whose telephone number is (571)270-1525. The examiner can normally be reached on Mon-Fri, 10:30AM - 7:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley Bayat can be reached on (571) 272-6704. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 4, 2008

/J. C./
Examiner, Art Unit 3624

/Bradley B Bayat/
Supervisory Patent Examiner, Art Unit 3624